

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket No.: 3279-Z

B & Seg

2587

In re application of

Richard J. Feldmann

Serial No. 10/609,383

Filed: 07/01/2003



Group: 2587

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of international application;
or before mailing date of first Office action on the merits; whichever occurs last.)
- ☐ under 37 CFR 1.97(c) together with either a:
 - ☐ Certification under 37 CFR 1.97(e), or
 - ☐ a \$180.00 fee under 37 CFR 1.17(p), or(After the CFR 1.97(b) time period, but before final action or notice of allowance,
whichever occurs first.)
- ☐ under 37 CFR 1.97(d) together with either a:
 - ☐ Certification under 37 CFR 1.97(e), and
 - ☐ a petition under 37 CFR 1.97(d)(2)(ii), and
 - ☐ a \$130.00 petition fee set forth in 37 CFR §117(i)(1).(Filed after final action or notice of allowance, whichever occurs first, but before
payment of the issue fee.)

Applicant(s) submits herewith Form PTO 1449-Information Disclosure Citation together with copies
(via CD ROM) of patents, publications or other information of which applicant(s) is aware, which applicant(s)
believe(s) may be material to the examination of this application and for which there may be a duty to disclose
in accordance with 37 CFR 1.56.

The relevance of the attached references is that this is the closest art of which applicant(s) is aware.

Applicant(s) submits that the above references taken alone or in combination neither anticipate nor
render obvious the present invention. Consideration of the foregoing in relation to this application is
respectfully requested.

Respectfully submitted,

Jim Zegeer
Jim Zegeer, Reg. No. 18,957
Attorney for Applicant(s)

Attachments:

Form PTO-1449 and CD ROM containing cited references

Suite 108
801 North Pitt Street
Alexandria, VA 22314
Telephone: 703-684-8333
Date: December 19, 2003

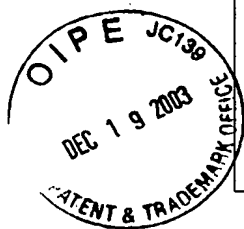
In the event this paper is deemed not timely filed,
the applicant hereby petitions for an appropriate
extension of time. The fee for this extension may
be charged to Deposit Account No. 26-0090 along
with any other additional fees which may be
required with respect to this paper.



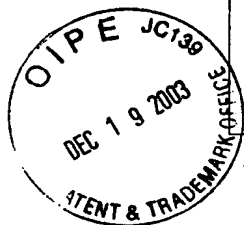
FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office Information Disclosure Statement By Applicant	Atty. Docket No. 3279-Z	Serial No. 10/609,383
	APPLICANT Richard J. Feldmann	
	Filing Date 07/01/2003	Group 2857

- | | | | |
|-----------|-------------------|--|--|
| <u>1</u> | Tettelin | Complete Genome Sequence of a Virulent Isolate of Streptococcus pneumoniae | Science 2001 July 20; 293: 498-506. |
| <u>2</u> | Ferber | S. pneumoniae Genome Falls to Sequencers | Science 2001 July 20; 293: 410 |
| <u>3</u> | Ghigo | Natural conjugative plasmids induce bacterial biofilm development | Nature 412, 442 - 445 (26 Jul 2001) |
| <u>4</u> | Gura | A silence that speaks volumes | Nature 404, 804 - 808 (20 Apr 2000) |
| <u>5</u> | Vance | RNA Silencing in Plants-Defense and Counterdefense | Science 2001 June 22; 292: 2277-2280. |
| <u>6</u> | Bergelson | Evolutionary Dynamics of Plant R-Genes | Science 2001 June 22; 292: 2281-2285. |
| <u>7</u> | Staskawicz | Common and Contrasting Themes of Plant and Animal Diseases | Science 2001 June 22; 292: 2285-2289. |
| <u>8</u> | Costerton | Battling Biofilms | Scientific American; July 2001; |
| <u>9</u> | (no author cited) | Fighting RNA with RNA | Science 1999 Oct. 29; 286: 869 |
| <u>10</u> | Strauss | Candidate 'Gene Silencers' Found | Science 1999 Oct. 29; 286: 886 |
| <u>11</u> | Hamilton | A Species of Small Antisense RNA in Posttranscriptional Gene Silencing in Plants | Science 1999 Oct. 29; 286: 950-952. |
| <u>12</u> | Lin | RNA interference: Policing rogue genes | Nature 402, 128 - 129 (11 Nov 1999) |
| <u>13</u> | Roush | Biotechnology: Antisense Aims for a Renaissance | Science 1997 May 23; 276: 1192-1193. |
| <u>14</u> | Voytas | Retroelements in Genome Organization | Science 1996 November 1; 274: 737-738. |

Examiner	Date Considered	Sheet 1 of 9
----------	-----------------	--------------



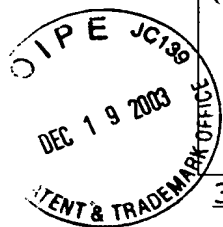
FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office		Atty. Docket No. 3279-Z	Serial No. 10/609,383
Information Disclosure Statement By Applicant		APPLICANT Richard J. Feldmann	
		Filing Date 07/01/2003	Group 2857
<u>15</u>	SanMiguel	Nested Retrotransposons in the Intergenic Regions of the Maize Genome	Science 1996 Nov. 1; 274: 765-768.
<u>16</u>	Adoutte	Small but mighty timekeepers	Nature 408, 37 - 38 (02 Nov 2000)
<u>17</u>	Pasquinelli	Conservation of the sequence and temporal expression of let-7 heterochronic regulatory RNA	Nature 408, 86-89 (02 Nov 2000)
<u>18</u>	Hammond	An RNA-directed nuclease mediates post-transcriptional gene silencing in Drosophila cells	Nature 404, 293-296 (16 Mar 2000)
<u>19</u>	Ketting	A genetic link between co-suppression and RNA interference in C. elegans	Nature 404, 296-298 (16 Mar 2000)
<u>20</u>	Eickbush	Molecular biology: Introns gain ground	Nature 404, 940-943 (27 Apr 2000)
<u>21</u>	unisci.com	Quorum sensing molecules found for key lab bacteria	unisci.com; 11 June 1998
<u>22</u>	Saitoh	Structural and functional conservation at the boundaries of the chicken β -globin domain	EMBO J. 2000 19: 2315-2322.
<u>23</u>	Bell	The Protein CTCF Is Required for the Enhancer Blocking Activity of Vertebrate Insulators	Cell 1999 98: 387-396
<u>24</u>	Sharp	RNA Interference	Science 2000 March 31; 287: 2431-2433.
Examiner		Date Considered	Sheet 2 of 9



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office		Atty. Docket No. 3279-Z	Serial No. 10/609,383
Information Disclosure Statement By Applicant		APPLICANT Richard J. Feldmann	
		Filing Date 07/01/2003	Group 2857

<u>25</u>	Grishok	Genetic Requirements for Inheritance of RNAi in <i>C. elegans</i>	Science 2000 March 31; 287: 2494-2497.
<u>26</u>	Domeier	A Link Between RNA Interference and Nonsense-Mediated Decay in <i>Caenorhabditis elegans</i>	Science 2000 September 15; 289: 1928-1930.
<u>27</u>	Ridley	Cancer: Molecular switches in metastasis	Nature 406, 466-467 (03 Aug 2000)
<u>28</u>	Clark	Genomic analysis of metastasis reveals an essential role for RhoC	Nature 406, 532 - 535 (03 Aug 2000)
<u>29</u>	Paro	Chromatin regulation: Formatting genetic text	Nature 406, 579-580 (10 Aug 2000)
<u>30</u>	Rea	Regulation of chromatin structure by site-specific histone H3 methyltransferases	Nature 406, 593-599 (10 Aug 2000)
<u>31</u>	Orphanides	RNA polymerase II elongation through chromatin	Nature 407, 471-475 (28 Sep 2000)
<u>32</u>	Vinson	Macromolecular Ballet	Science 2000 May 26; 288: 1369
<u>32.1</u>	Marx	Interfering With Gene Expression	Science 2000 May 26; 288: 1370-1372.
<u>32.2</u>	Pennisi	Matching the Transcription Machinery to the Right DNA	Science 2000 May 26; 288: 1372-1373.
<u>32.3</u>	Wente	Gatekeepers of the Nucleus	Science 2000 May 26; 288: 1374-1377.
<u>32.4</u>	Gasser	A Sense of the End	Science 2000 May 26; 288: 1377-1379.
<u>32.5</u>	Nasmyth	Splitting the Chromosome: Cutting the Ties That Bind Sister Chromatids	Science 2000 May 26; 288: 1379-1384.

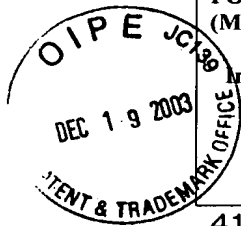
Examiner	Date Considered	Sheet 3 of 9
----------	-----------------	--------------



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office Information Disclosure Statement By Applicant	Att. Docket No. 3279-Z	Serial No. 10/609,383
	APPLICANT Richard J. Feldmann	
	Filing Date 07/01/2003	Group 2857

- 32.6 Lewis Like Attracts Like: Science 2000 May 26;
Getting RNA Processing 288: 1385-1389.
Together in the Nucleus
- 33 Ochman Lateral gene transfer Nature 405, 299-304 (18
and the nature of May 2000)
bacterial innovation
- 34 Nisbet Palaeobiology: The Nature 405, 625-626 (08
realms of Archaean life Jun 2000)
35 Bell Insulators and Science 2001 Jan. 19;
Boundaries: Versatile 291: 447-450.
Regulatory Elements in
the Eukaryotic Genome
- 36 Hartl Nuclear Assembly with 1994 J. Cell Biol. 124:235
k DNA in Fractionated
Xenopus Egg Extracts:
An Unexpected Role for
Glycogen in Formation
of a Higher Order
Chromatin Intermediate
- 37 Baulcombe Unwinding RNA Science 2000 Nov. 10;
Silencing 290: 1108-1109
- 38 Wu-Scharf Transgene and Science 2000 Nov. 10;
Transposon Silencing in 290: 1159-1162
Chlamydomonas
reinhardtii by a DEAH-
Box RNA Helicase
- 39 Myung Multiple pathways Nature 411, 1073-1076
cooperate in the (28 Apr 2001)
suppression of genome
instability in
Saccharomyces
cerevisiae
- 40 Bulger Comparative structural PNAS 2000; 97: 14560-
and functional analysis 14565.
of the olfactory receptor
genes flanking the
human and mouse -
globin gene clusters

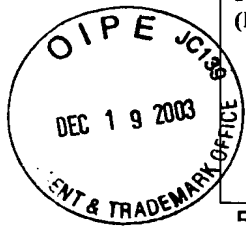
Examiner	Date Considered	Sheet 4 of 9
----------	-----------------	--------------



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office		Atty. Docket No. 3279-Z	Serial No. 10/609,383
Information Disclosure Statement By Applicant		APPLICANT Richard J. Feldmann	
		Filing Date 07/01/2003	Group 2857

- | | | |
|--|---|--|
| <p><u>41</u> Bulger</p> <p><u>42</u> Doench</p> <p><u>43</u> Felsenfeld</p> <p><u>44</u> Ball</p> <p><u>45</u> Collins</p> <p><u>46</u> Lau</p> <p><u>47</u> Kapranov</p> <p><u>48</u> Hamilton</p> <p><u>49</u> Baulcombe</p> | <p>Conservation of
sequence and structure
flanking the mouse and
human -globin loci: The
-globin genes are
embedded within an
array of odorant
receptor genes</p> <p>siRNAs can function as
miRNAs</p> <p>Controlling the double
helix</p> <p>Portrait of a molecule</p> <p>A vision for the future
of genomics research</p> <p>An Abundant Class of
Tiny RNAs with Probable
Regulatory Roles in
Caenorhabditis elegans</p> <p>Large-Scale
Transcriptional Activity
in Chromosomes 21 and
22</p> <p>Two classes of short
interfering RNA in RNA
silencing</p> <p>DNA Events. An RNA
Microcosm</p> | <p>PNAS 1999; 96: 5129-
5134.</p> <p>Genes Dev. 2003 17: 438-
442.</p> <p>Nature 421, 448 - 453 (23
Jan 2003)</p> <p>Nature 421, 421 - 422 (23
Jan 2003)</p> <p>Nature 422, 835 - 847 (24
Apr 2003)</p> <p>Science 2001 October 26;
294: 858-862.</p> <p>Science 2002 May 3; 296:
916-919.</p> <p>EMBO J. 2002 21: 4671-
4679.</p> <p>Science 2002 September
20; 297: 2002-2003.</p> |
|--|---|--|

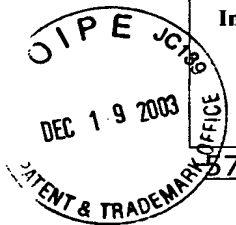
Examiner	Date Considered	Sheet 5 of 9



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office Information Disclosure Statement By Applicant	Atty. Docket No. 3279-Z	Serial No. 10/609,383
	APPLICANT Richard J. Feldmann	
	Filing Date 07/01/2003	Group 2857

- 50 Banerjee Control of developmental timing by small temporal RNAs: a paradigm for RNA-mediated regulation of gene expression BioEssays 2002; 24: 119-129
- 51 Volpe Regulation of Heterochromatic Silencing and Histone H3 Lysine-9 Methylation by RNAi Science 297: 1833-1837;
- 52 West Insulators: many functions, many mechanisms Genes Dev. 2002 16: 271-288.
- 53 Hall Establishment and Maintenance of a Heterochromatin Domain Science 297: 2232-2237
- 54 Wolffe Chromatin disruption and modification Nucl. Acids. Res. 1999 27: 711-720.
- 55 Bulger Conservation of sequence and structure flanking the mouse and human -globin loci: The -globin genes are embedded within an array of odorant receptor genes PNAS 1999; 96: 5129-5134.
- 56 Bulger Comparative structural and functional analysis of the olfactory receptor genes flanking the human and mouse -globin gene clusters PNAS 2000; 97: 14560-14565.

Examiner	Date Considered	Sheet 6 of 9
----------	-----------------	--------------



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office Information Disclosure Statement By Applicant	Atty. Docket No. 3279-Z	Serial No. 10/609,383
	APPLICANT Richard J. Feldmann	
	Filing Date 07/01/2003	Group 2857

- 57 Rastinejad Tumor suppression by RNA from the 3' untranslated region of alpha-tropomyosin. Cell. 1993 Dec 17;75(6):1107-17.
- 58 Zeng Both Natural and Designed Micro RNAs Can Inhibit the Expression of Cognate mRNAs When Expressed in Human Cells Molecular Cell 2002 9: 1327-1333.
- 59 Grishok Genes and mechanisms related to RNA interference regulate expression of the small temporal RNAs that control C. elegans developmental timing. Cell. 2001 Jul 13; 106(1):23-34.
- 60 Wightman Posttranscriptional regulation of the heterochronic gene lin-14 mediates temporal pattern formation in C. elegans, 1993, Cell 75: 855-862.
- 61 Richards Epigenetic Codes for Heterochromatin Formation and Silencing: Rounding up the Usual Suspects Cell 2002 108: 489-500.
- 62 Wu 25 years after the nucleosome model: chromatin modifications, Trends in Biochemical Science; December, 2000; 25: 619-623
- 63 Cuvier Identification of a multicopy chromatin boundary element at the borders of silenced chromosomal domains Chromosoma 2002 110:519-531

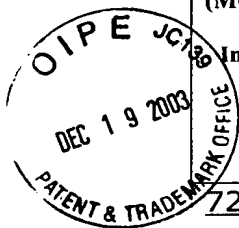
Examiner	Date Considered	Sheet 7 of 9
----------	-----------------	--------------



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office		Atty. Docket No. 3279-Z	Serial No. 10/609,383
Information Disclosure Statement By Applicant		APPLICANT Richard J. Feldmann	
		Filing Date 07/01/2003	Group 2857

- | | | | |
|-----------|-----------|--|---|
| <u>64</u> | Hart | Facilitation of chromatin dynamics by SARs | Current Opinion in Genetics and Devel
Vol 8, October 1998, pp
519-525 |
| <u>65</u> | Ha | A bulged lin-4/lin-14 RNA duplex is sufficient for Caenorhabditis elegans lin-14 temporal gradient formation | Genes Dev. 1996 10:
3041-3050. |
| <u>66</u> | Feldmann | Control of Gene Expression by Connectrons | unpublished notes |
| <u>67</u> | Tang | A transcriptional enhancer required for the differential expression of the human estrogen receptor in breast cancers | Mol. Cell. Biol. 1997 17:
1274-1280. |
| <u>68</u> | Hirotsune | An expressed pseudogene regulates the messenger-RNA stability of its homologous coding gene | Nature 423, 91 - 96 (01
May 2003) |
| <u>69</u> | Tufarelli | Transcription of antisense RNA leading to gene silencing and methylation as a novel cause of human genetic disease | Nature Genetics 34, 157 -
165 (01 Jun 2003) |
| <u>70</u> | Dernburg | A Chromosome RNAissance | Cell 2002 111: 159-162. |
| <u>71</u> | Yelin | Widespread occurrence of antisense transcription in the human genome | Nature Biotechnology 21,
379 - 386 (01 Apr 2003) |

Examiner	Date Considered	Sheet 8 of 9
----------	-----------------	--------------



FORM PTO-1449 U.S. Department of Commerce (MODIFIED) Patent and Trademark Office Information Disclosure Statement By Applicant	Atty. Docket No. 3279-Z	Serial No. 10/609,383
	APPLICANT Richard J. Feldmann	
	Filing Date 07/01/2003	Group 2857

72 Segal Module networks: Nature Genetics 34, 166 -
identifying regulatory 176 (01 Jun 2003)
modules and their
condition-specific
regulators from gene
expression data

73 Carmichael Antisense starts making Nature Biotechnology 21,
more sense 371 - 372 (01 Apr 2003)

74 Resnik Functional and Genetica 83:293-299,
structural units in the 1991.
Chromomere

Examiner	Date Considered	Sheet 9 of 9
----------	-----------------	--------------